

World War I — Late 1917 To 1918 Era
American Car & Foundry Company — Depew New York USA
Production Of 155 Millimeter Combat Steel Shells Mark VII
For The United States Army
Real Picture Postcards of Production Operations

It appears these real picture postcards
were used in the production of the 1919 book:

The American Car and Foundry Company In Khaki.

This book is readily available to read free at www.HathiTrust.org.

Not all postcard images were used in the book, and much of the information
written onto the backs of the postcards does not seem to appear in the book either.

Thus it was felt important to post these postcard images and information here on Archive.



1
156^M COM. STEEL SHELL, MARK VII, A.C. & F. CO. DEPEW, N.Y.

POST CARD

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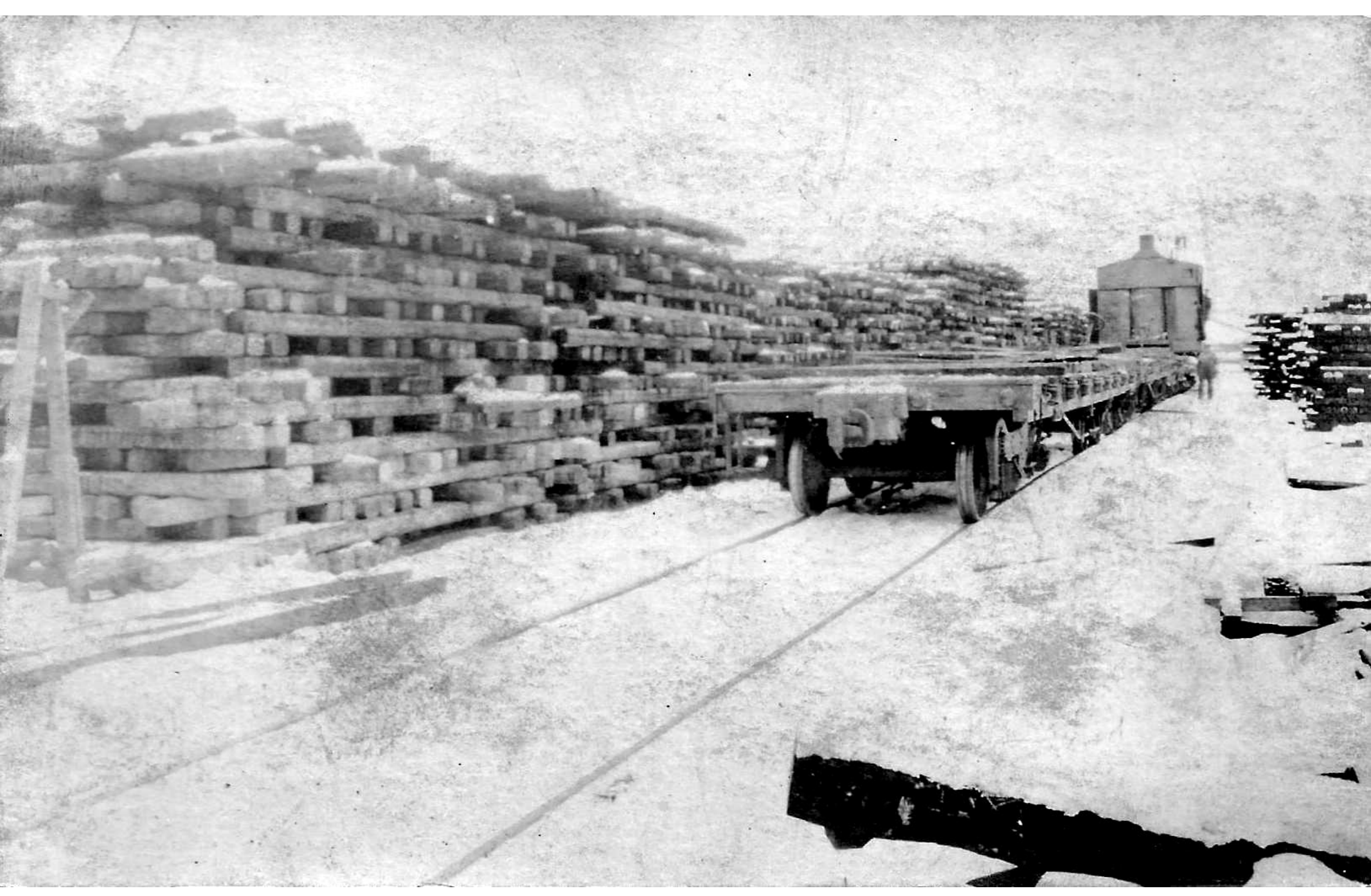
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- 1- BILLET BEFORE PIERCING, 5 IN. SQ. X 18 LONG.
- 2- BILLET AFTER PIERCING, 7 IN. DIA. X 25 LONG.
- 3- SHELL AFTER ROUGH TURN & CUT OFF OPEN END OPERATION.
- 4- SHELL AFTER CLOSING IN THE NOSE.
- 5- SHELL AFTER NOSE TAPPING, FACE BASE, & FINISH TURN OPERATIONS.
- 6- SHELL AFTER CUTTING GROOVES FOR COPPER BANDS.
- 7- SHELL AFTER COPPER BAND HAS BEEN APPLIED.
- 8- SHELL AFTER COPPER BAND HAS BEEN TURNED.



2

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VIEW OF STEEL STORAGE IN YARDS. STEEL WAS SUPPLIED
BY THE GOVERNMENT IN BARS $4\frac{1}{2}$ IN. SQ. AND OF VARYING
LENGTHS, AND WAS HANDLED BY THE STEAM CRANE SHOWN.



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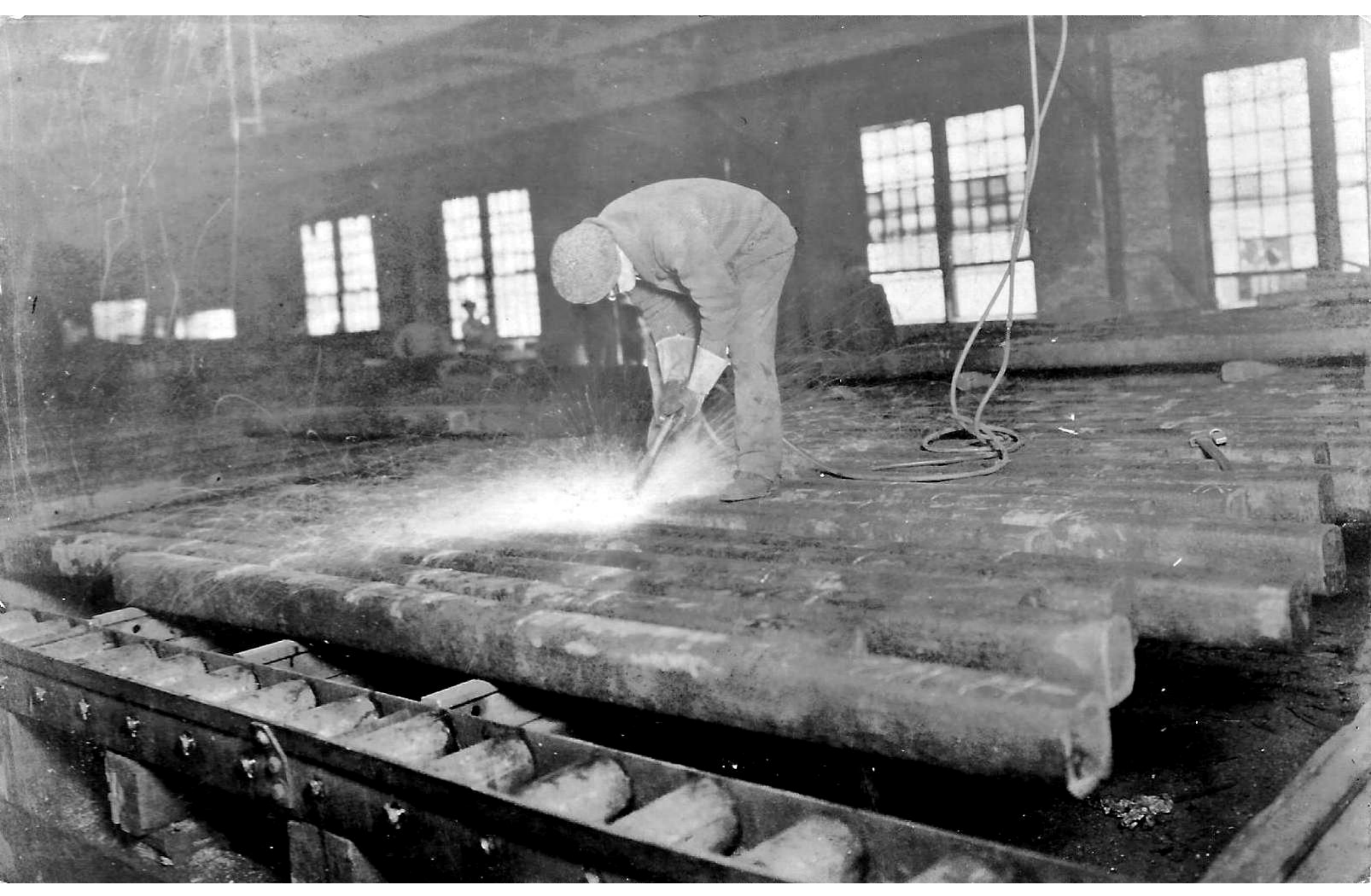
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AFTER LEAVING THE YARD THE BARS WERE TAKEN TO THE
NICKING TABLES, WHERE A NICK ABOUT $\frac{1}{4}$ IN DEEP WAS CUT ON
ONE SIDE OF THE BAR WITH AN
THE NICKS WERE MADE ABOUT 18 INS. APART OVER THE WHOLE
LENGTH OF THE BAR.



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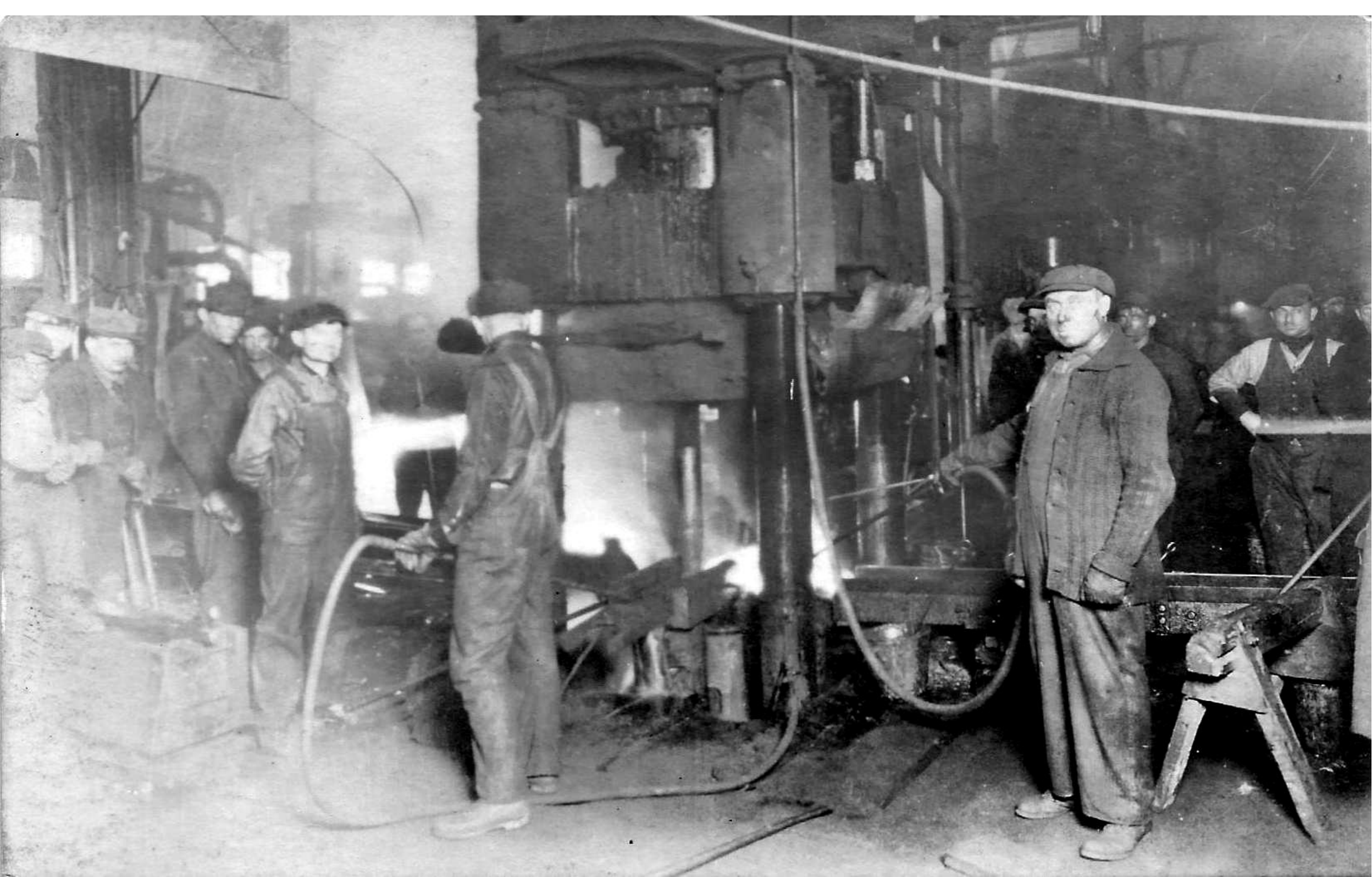
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NEXT THE BARS GO TO THE BULLDOZER, WHERE THEY ARE
 BROKEN INTO BILLETS, AS SHOWN IN THIS PICTURE. ONE BULLDOZER
 WAS ABLE TO BREAK ENOUGH BILLETS FOR THE WHOLE DAILY
 PRODUCTION, WHICH WAS 8,000 SHELLS. NOTE THAT THE BREAK
 IS SMOOTH AND SQUARE.



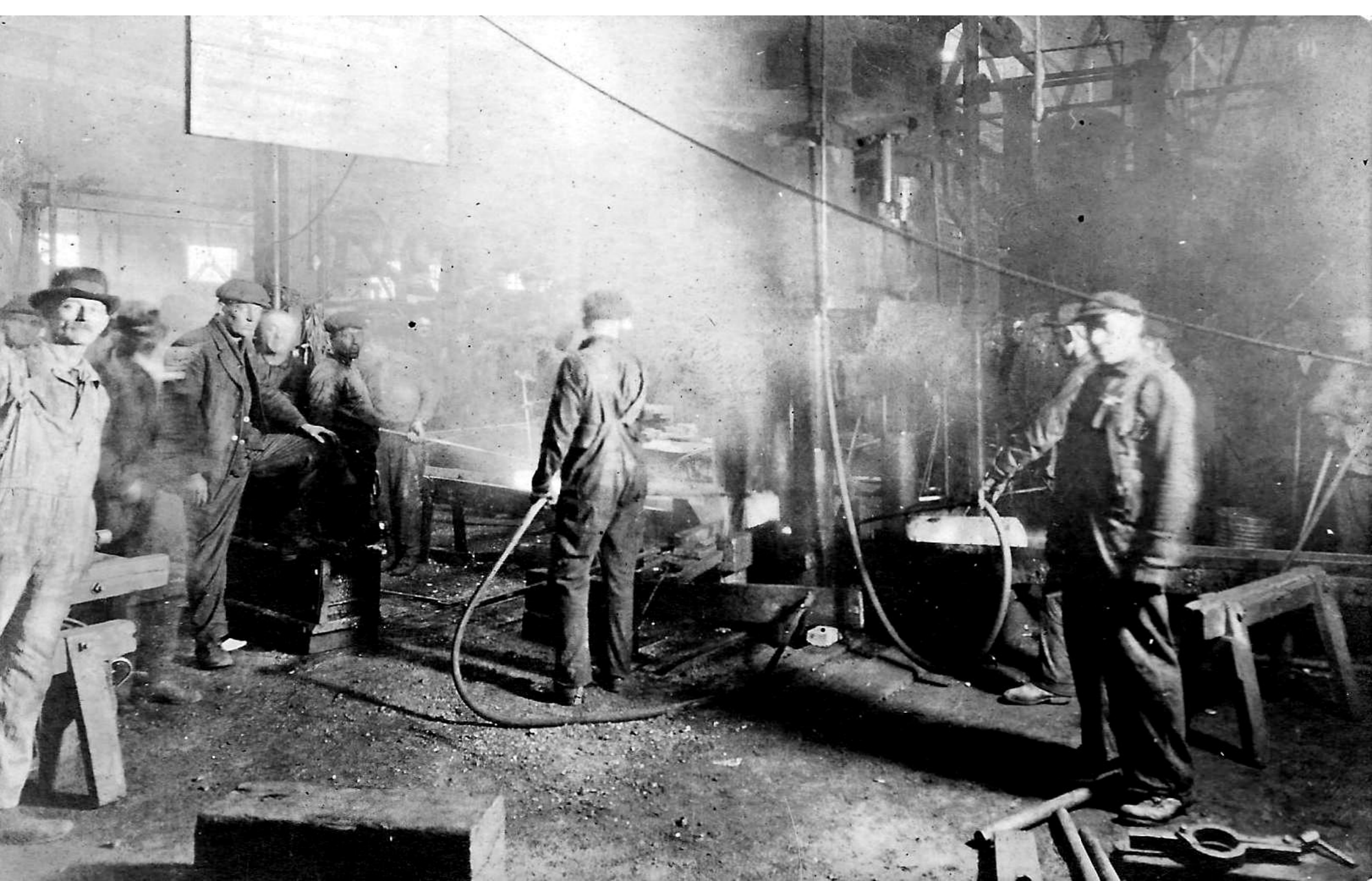
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THE BILLETS THEN GO TO THE FURNACES AND ARE HEATED TO A WHITE HEAT. FROM THE FURNACE THEY ARE TAKEN TO THE FORGING PRESS WHERE THE HOLE IN THE CENTER IS PIERCED IN ONE OPERATION. THIS PICTURE SHOWS THE FORGING PRESS WHICH EXERTS A PRESSURE OF 700 TONS. IT IS OF THE HYDRAULIC TYPE USING A 500 LB. PER SQ. IN. WATER PRESSURE.



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AFTER FORGING THE SHELLS ARE ALLOWED TO COOL IN THE YARD BEFORE GOING TO THE MACHINE SHOP. IN THIS PICTURE THE FORGE SHOP IS SHOWN ON THE RIGHT AND THE MACHINE ON THE LEFT. THE WHITE BUILDING IN THE BACK GROUND IN ONE OF THE ANNEALING ROOMS OF WHICH THERE WERE TWO ONE ON EACH SIDE OF THE MACHINE SHOP.



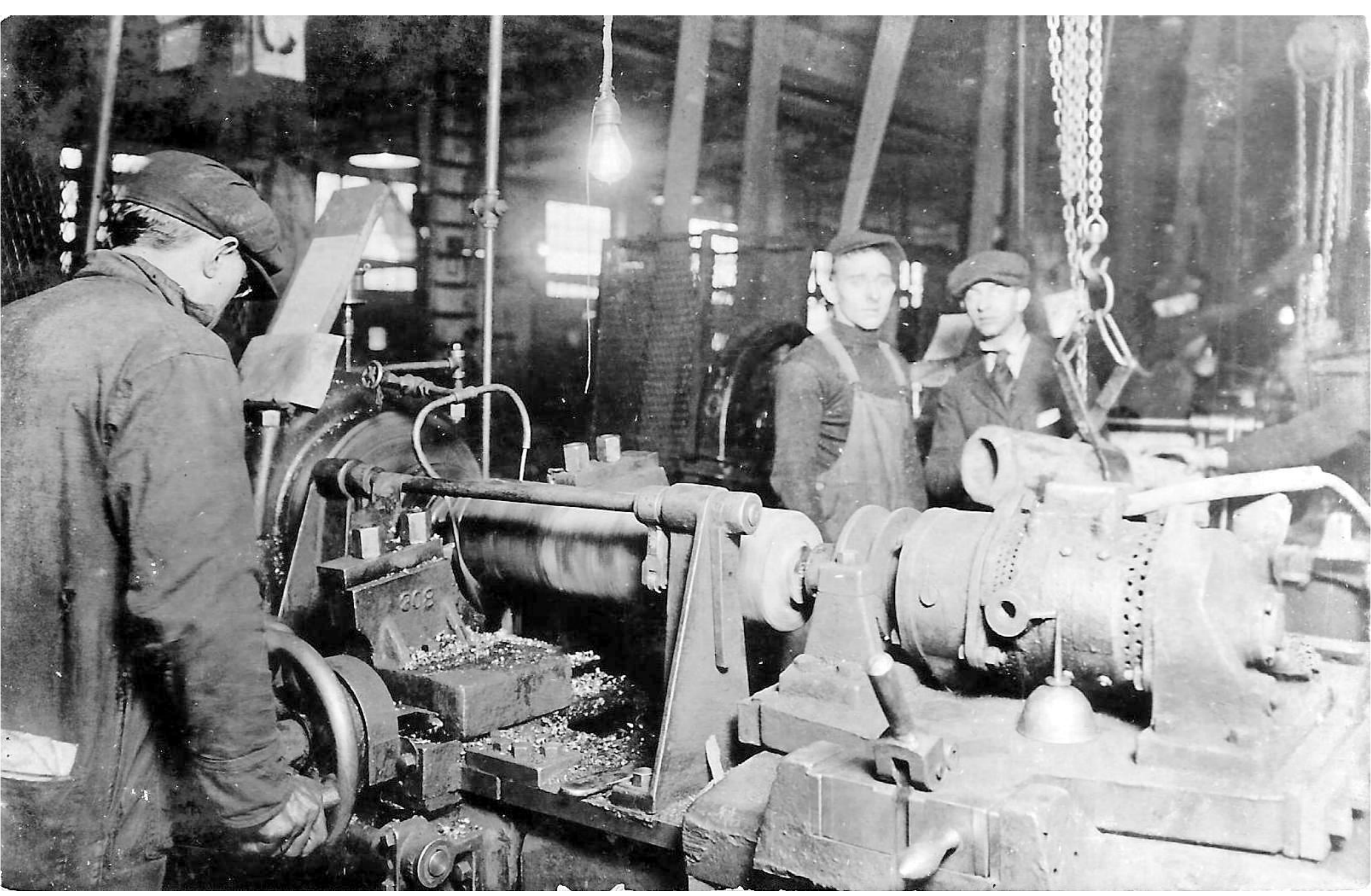
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THIS PICTURE SHOWS THE FIRST MACHINING OPERATION THE FORGING IS TESTED FOR CONCENTRICITY AND LENGTH, THE OPEN END CUT OFF AND CENTER HOLE DRILLED. THE FORGING IS HELD ON AN AIR OPERATED EXPANDING MANDREL AND TWO CUT OFF TOOLS OF HIGH SPEED STEEL ARE USED. THE CENTER DRILL IS DRIVEN BY SEPERATE MOTOR WHICH CAN BE SWUNG OUT OF THE WAY SO THAT FORGING CAN BE REMOVED FROM MANDREL.



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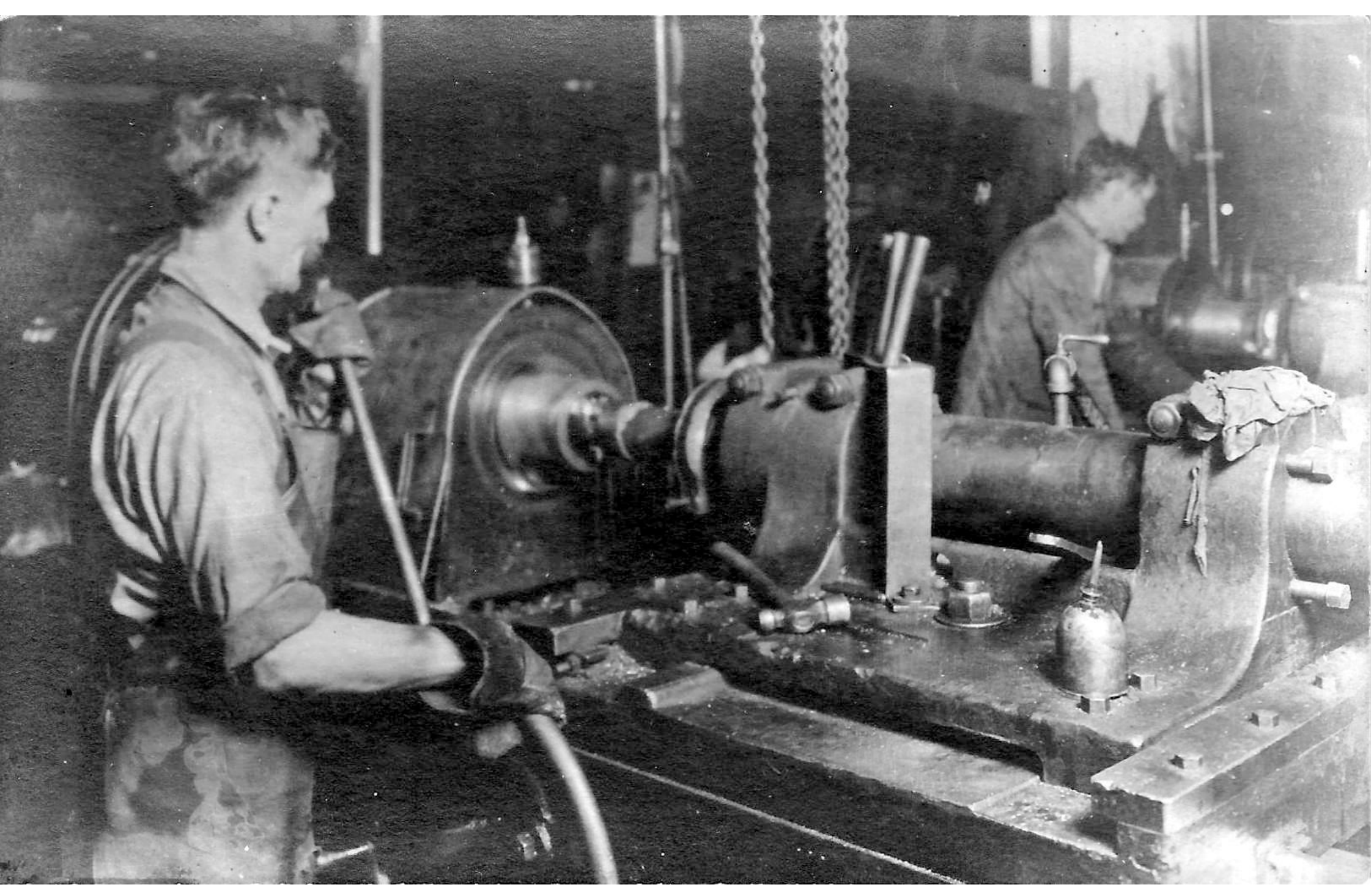
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THE SHELL THEN GOES TO THE ROUGH TURN OPERATION WHERE THE OUTSIDE DIAMETER IS TURNED OVER ITS ENTIRE LENGTH TO WITHIN ONE EIGHTH INCH OF FINISHED SIZE. THE CUTTING TOOL IS OF STELLITE WELDED TO A MACHINE STEEL SHANK, THE CUT OFTEN BEING THREE QUARTERS OF AN INCH DEEP AND USING ONE EIGHTH FEED. THE SHELL IS HELD AND DRIVEN BY AN AIR OPERATED EXPANDING MANDREL.



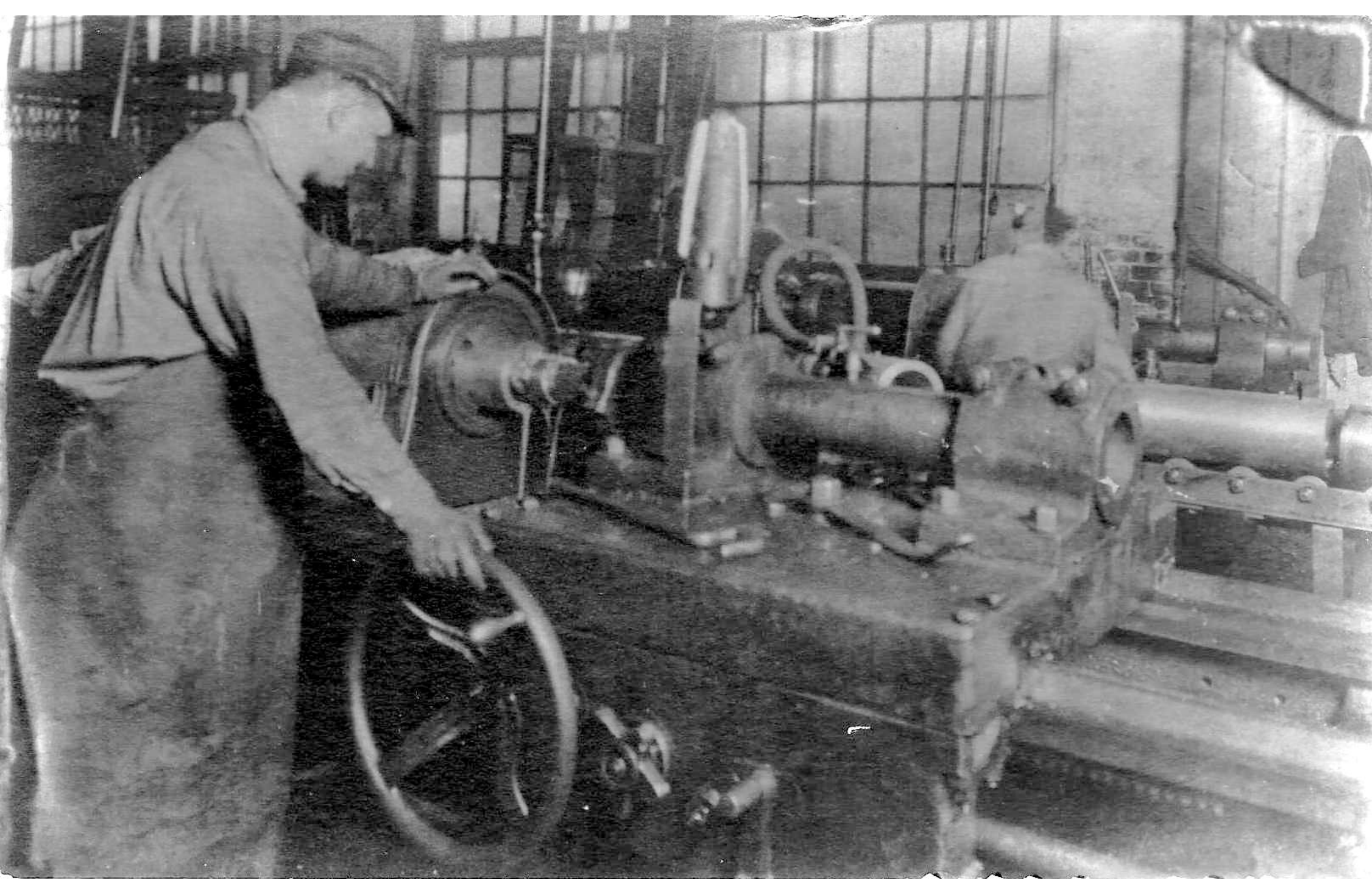
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NEXT IS THE BORING OPERATION, HERE THE SHELL IS
 HELD IN A AIR OPERATED COLLET CHUCK, THE BORING
 IS DONE WITH A ROUGH AND FINISH CUTTER HEAD WITH
 INSERTED BLADES, OF HIGH SPEED STEEL.



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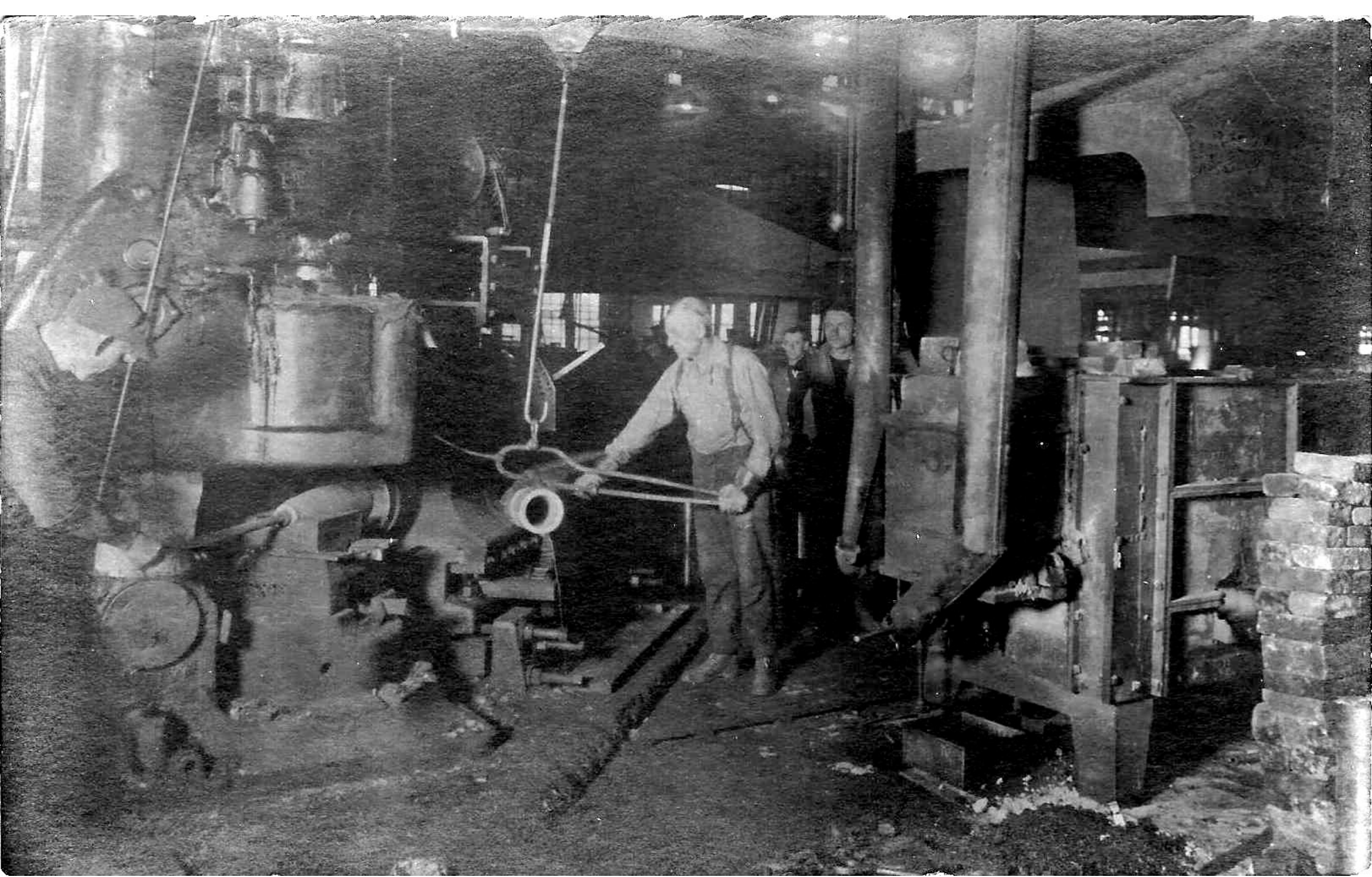
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AFTER BEING BORED THE OPEN END IS HEATED TO A WHITE
HEAT AN IS THEN HAMMERED IN AS SHOWN IN THIS
PICTURE,



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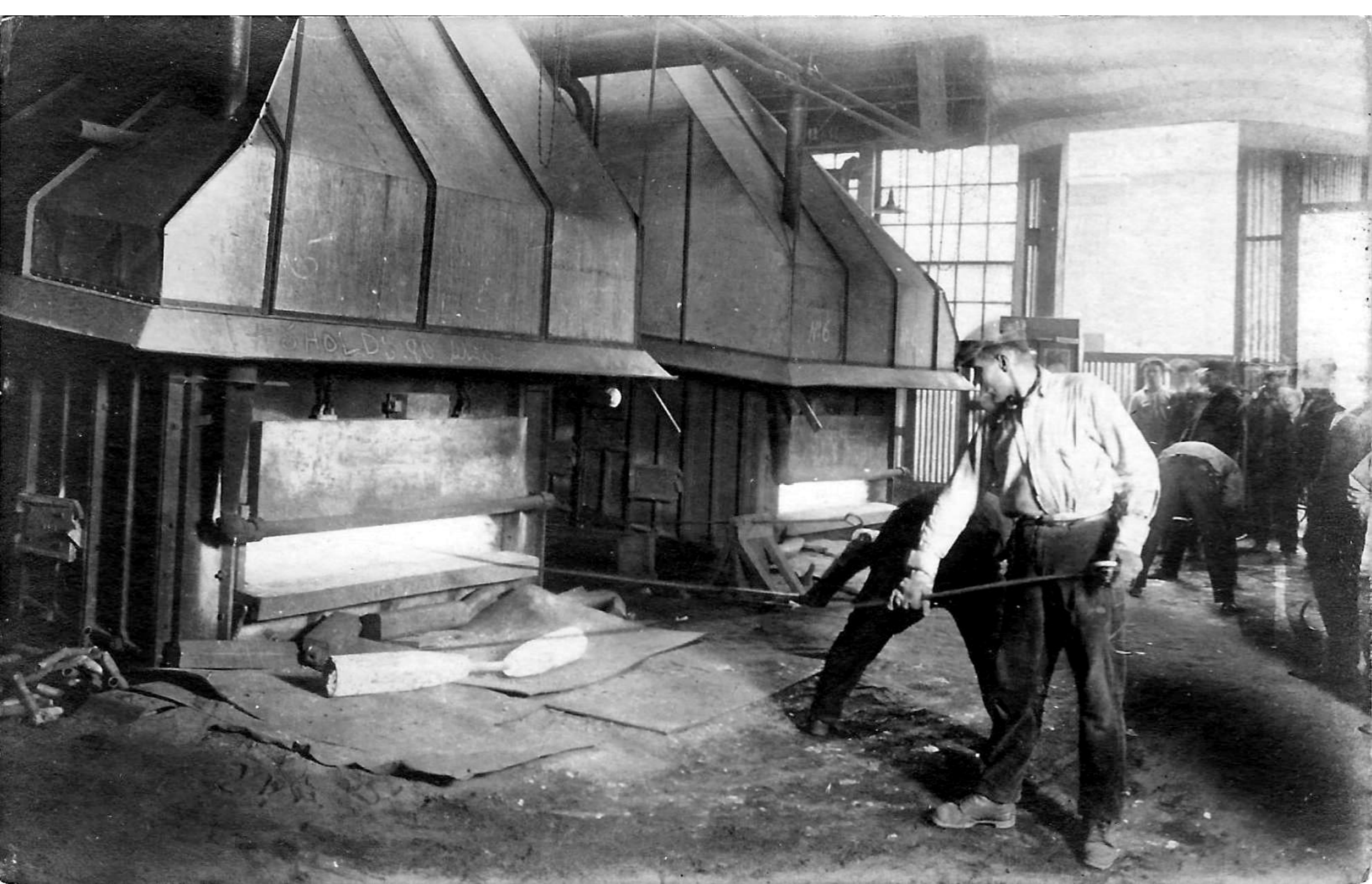
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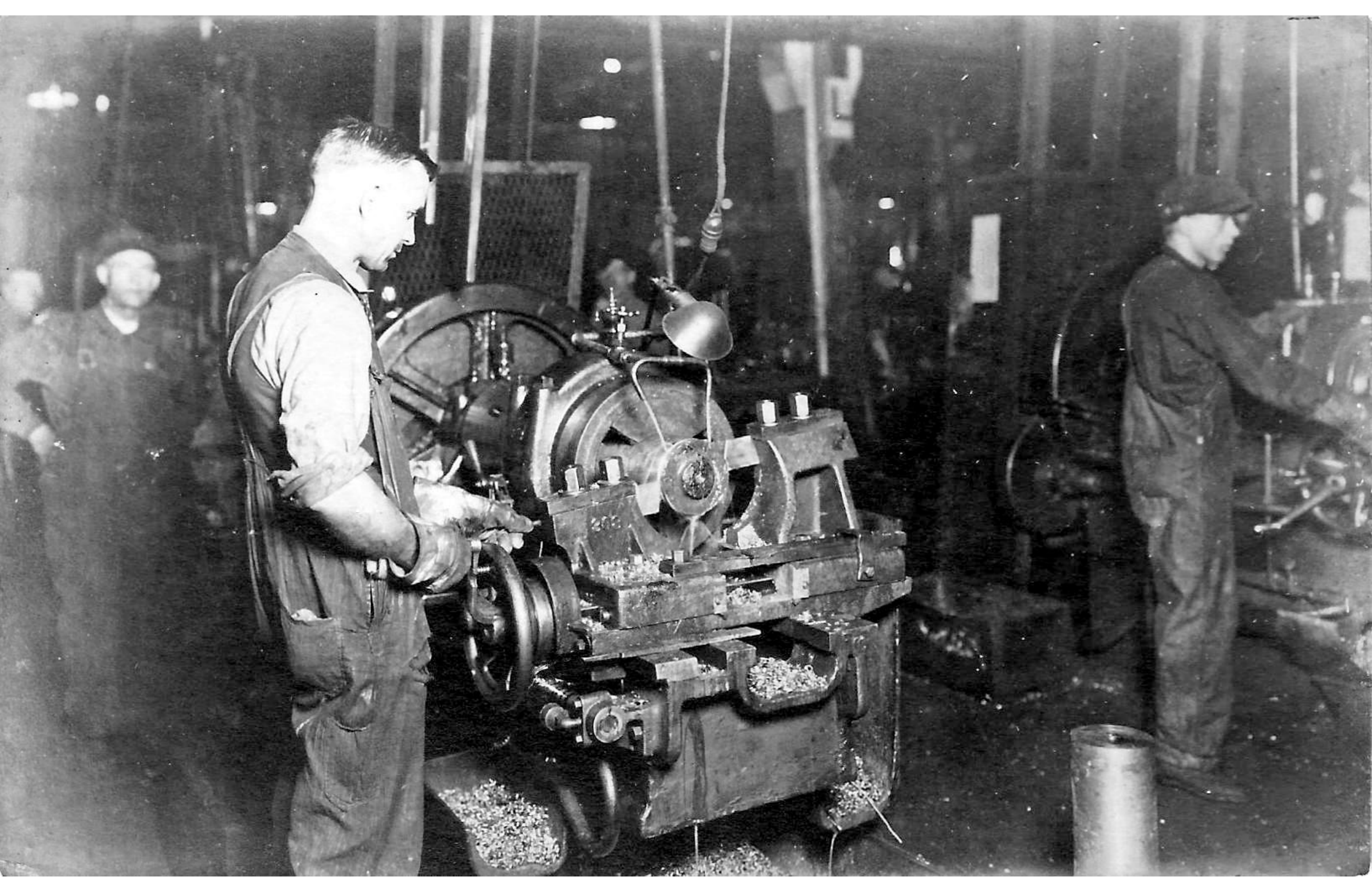
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IN THIS PICTURE ARE SHOWN THE HEATTREATING OVENS
WHERE ALL SHELLS ARE TREATED TO GIVE AN EVEN
HARDNESS & STRENGTH.



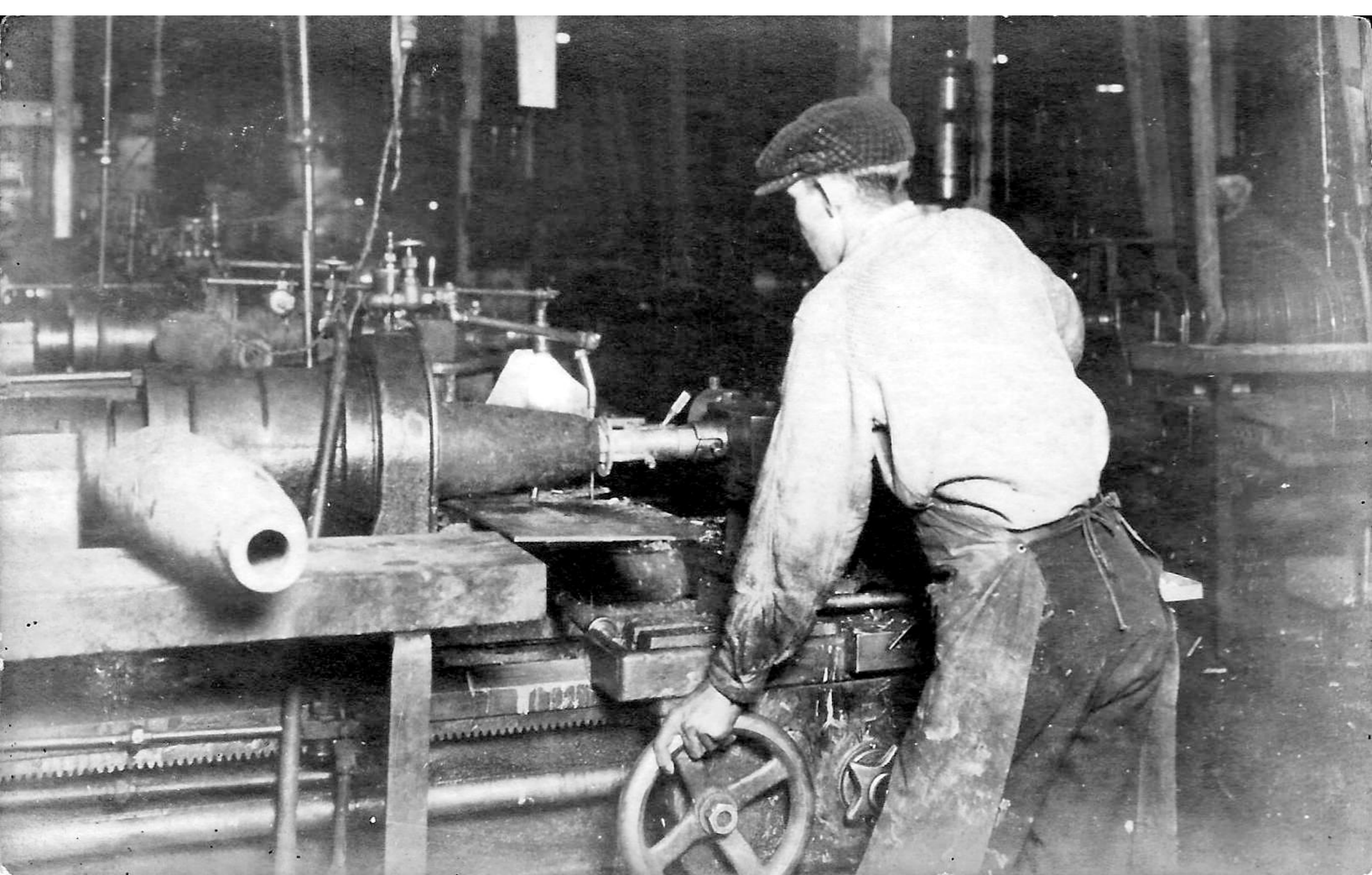
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ON THIS MACHINE THE BACE END IN BEING CUT OFF WHICH
 REMOVES THE CENTER HOLE USED IN ROUGH TURNING
 AND LEAVES THE SHELL OF APPROX. THE RIGHT LENGTH.



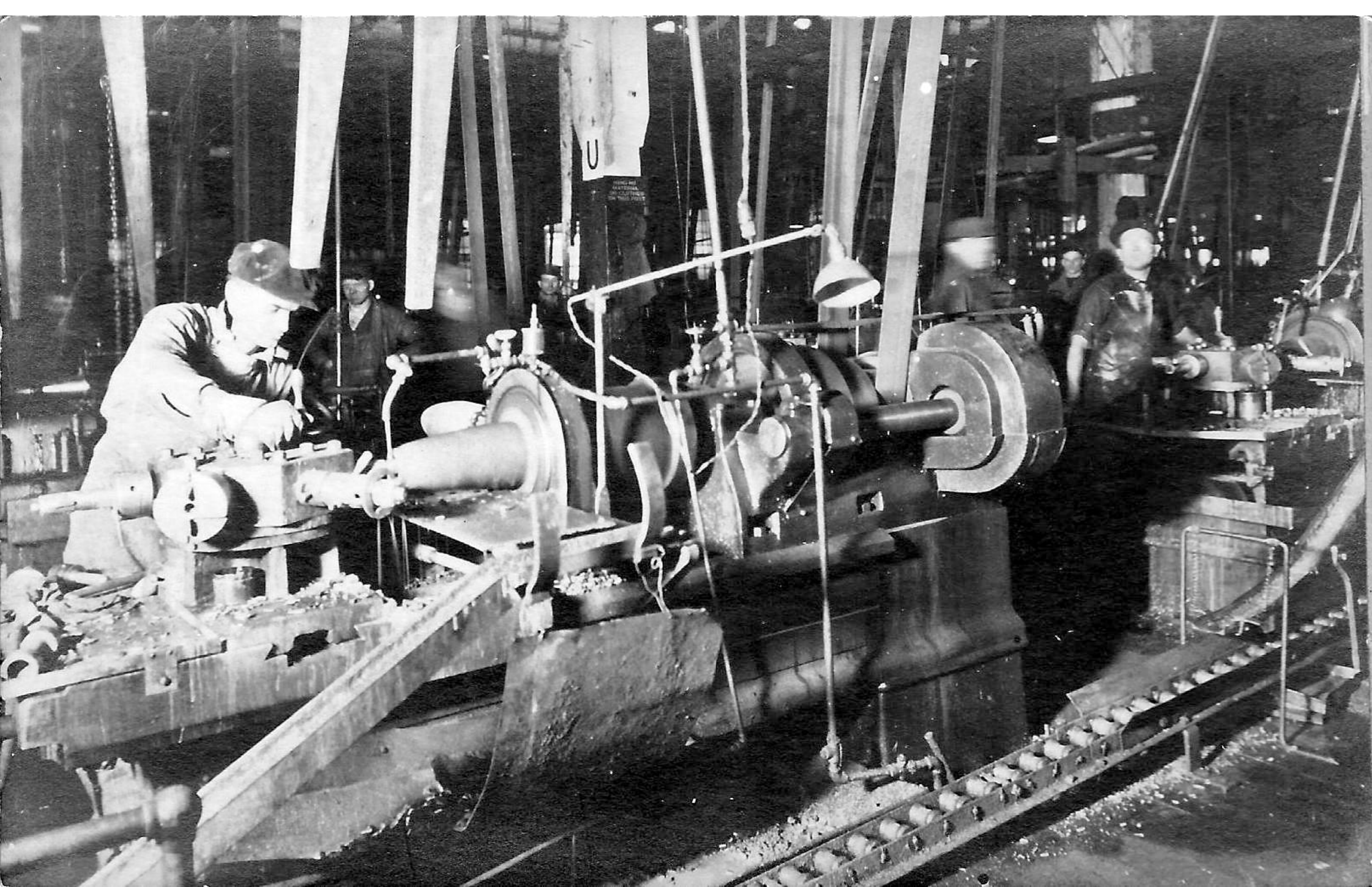
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NEXT IS SHOWN THE NOSE TAPPING OPERATION. A STD. 2 IN. PIPE THREAD IN CUT IN THE NOSE OF THE SHELL, TO RECEIVE THE NOSE PLUG OF FUZE. THIS WAS DONE WITH A FOUR BLADE QUICK ACTING TAP.



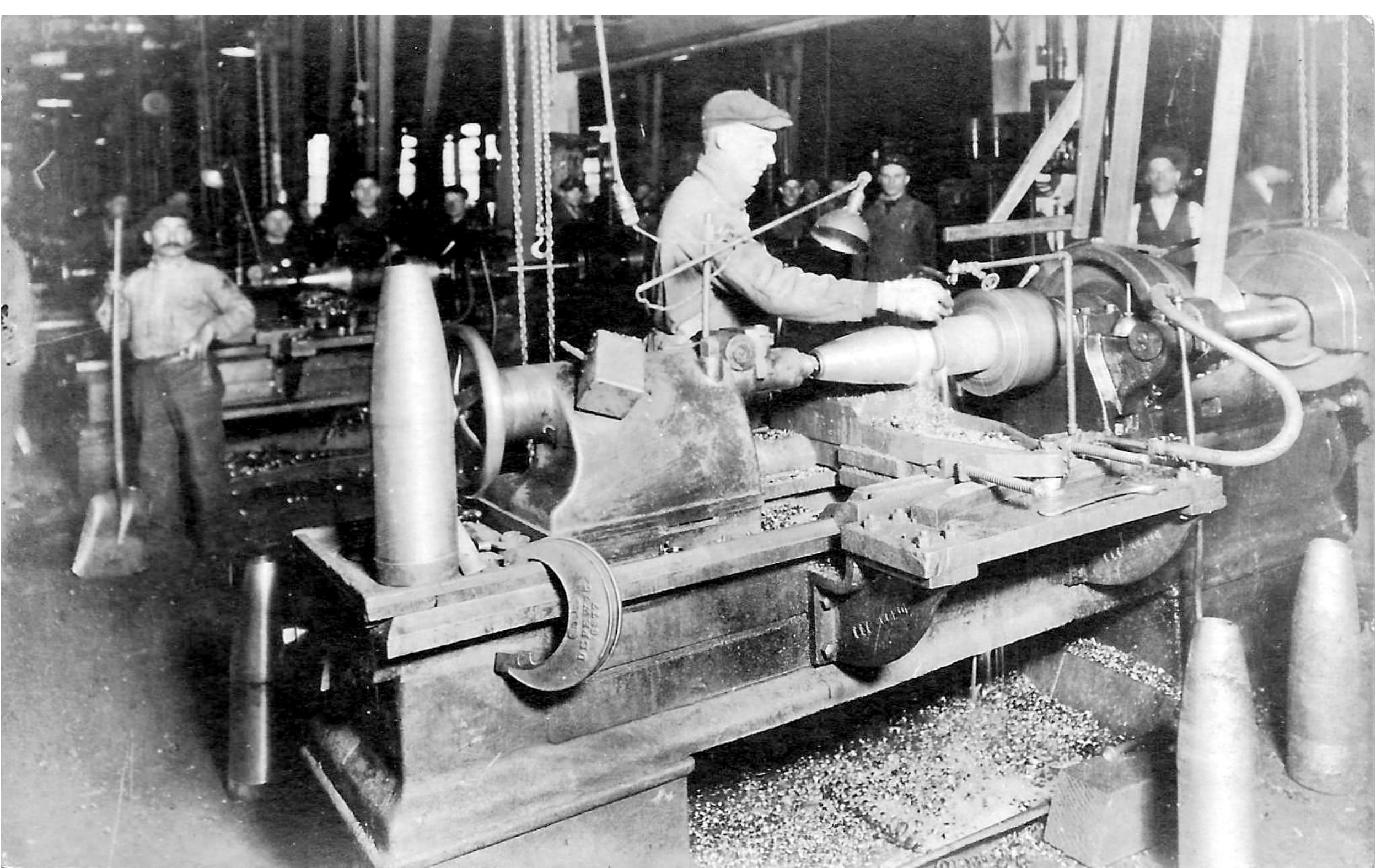
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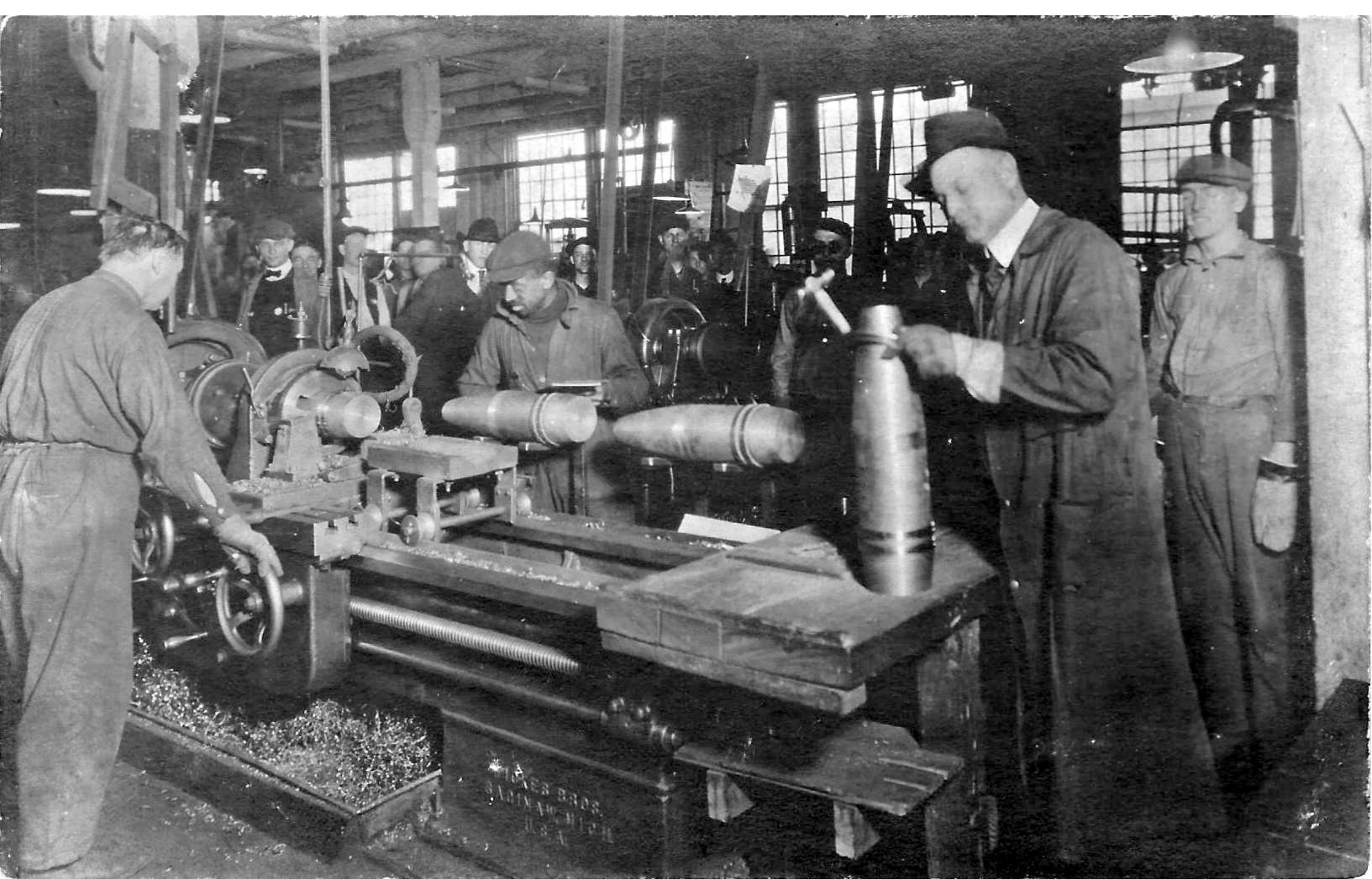
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HERE IS SHOWN THE FINISH TURN OPERATION, WHICH GIVES
THE NOSE END THE PROPER PROFILE, & THE CORRECT
DIAMETER FOR BODY OF SHELL.

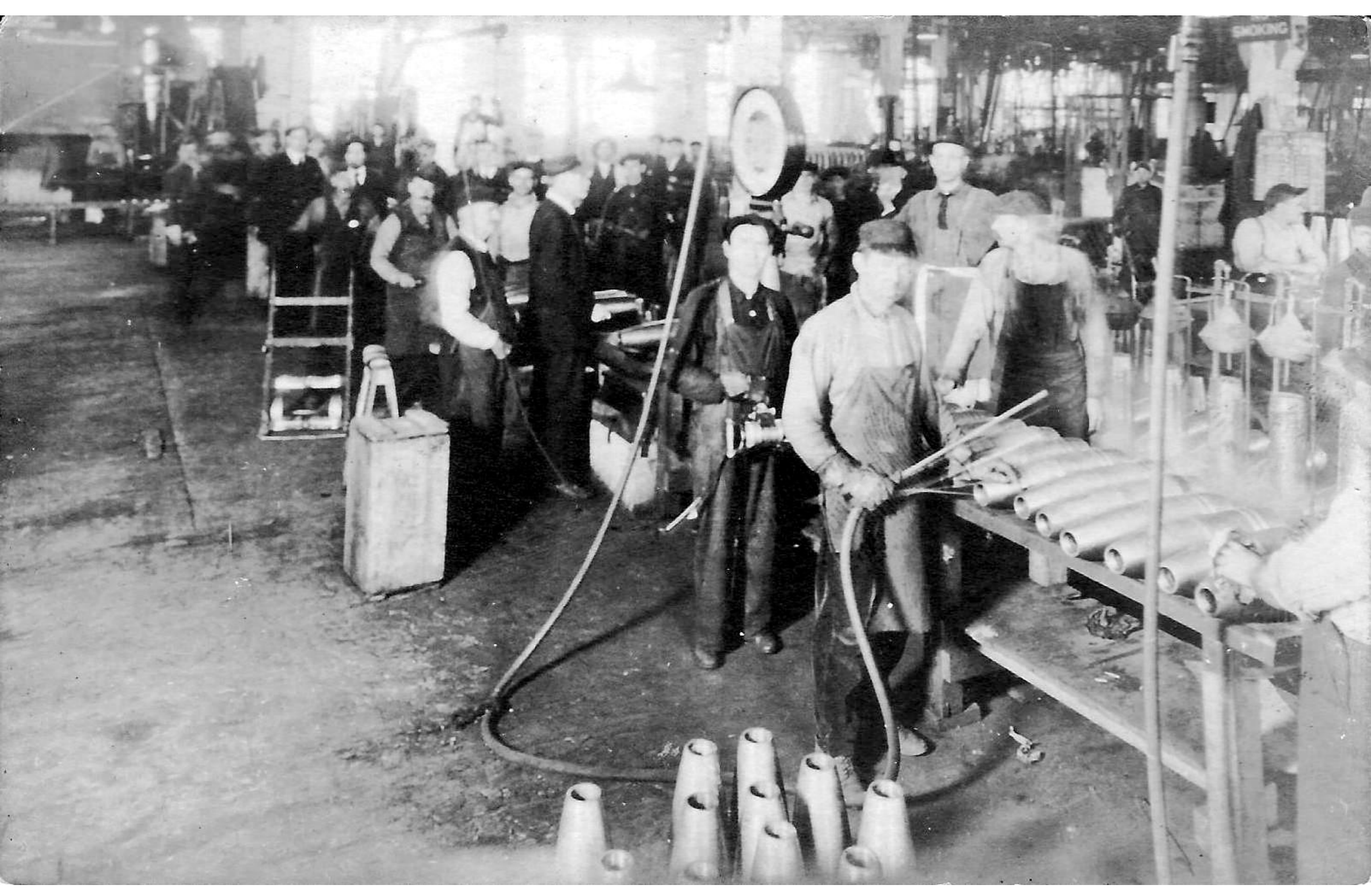


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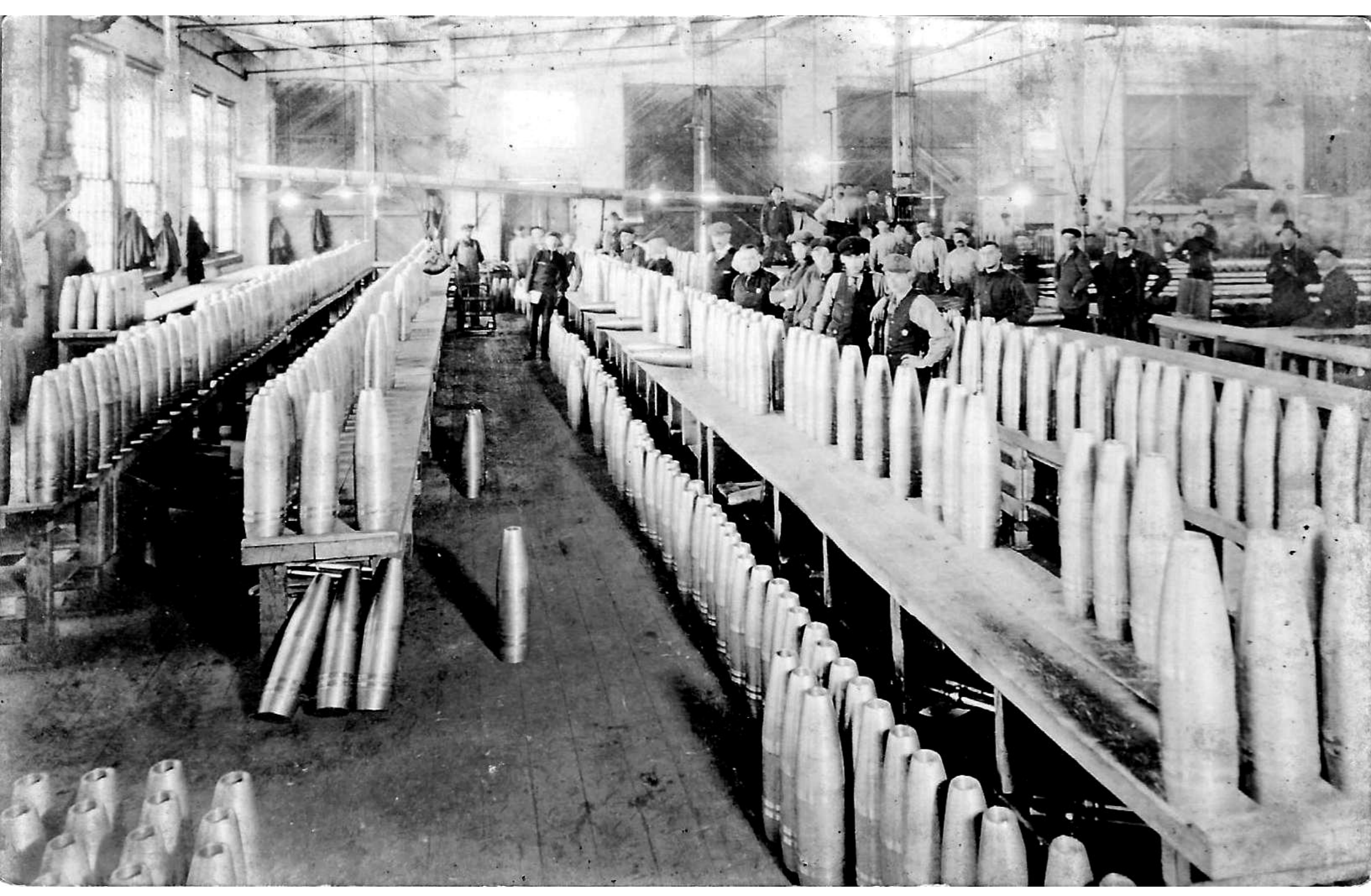
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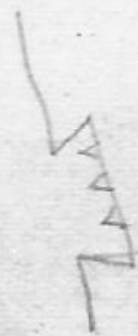
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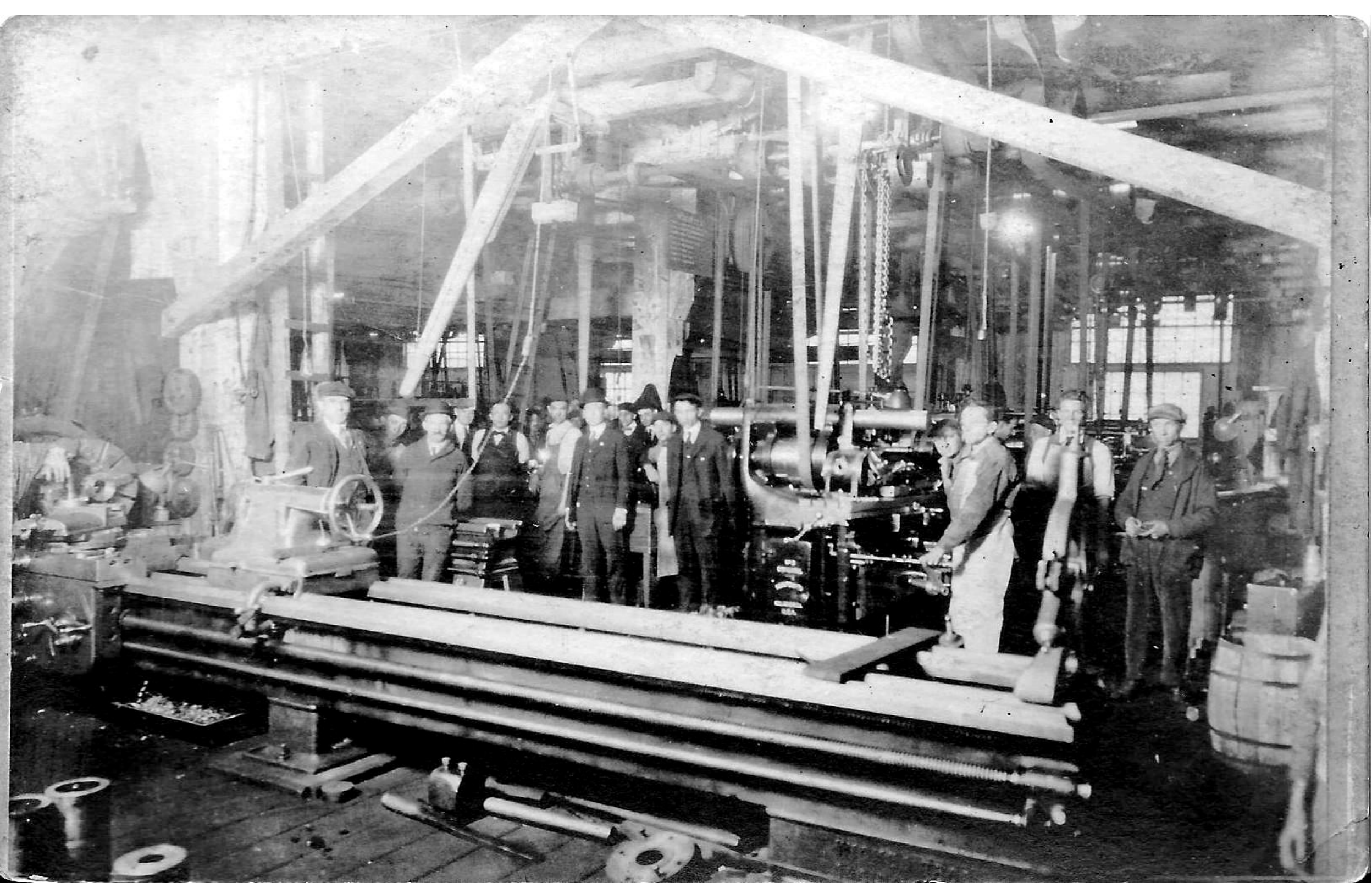
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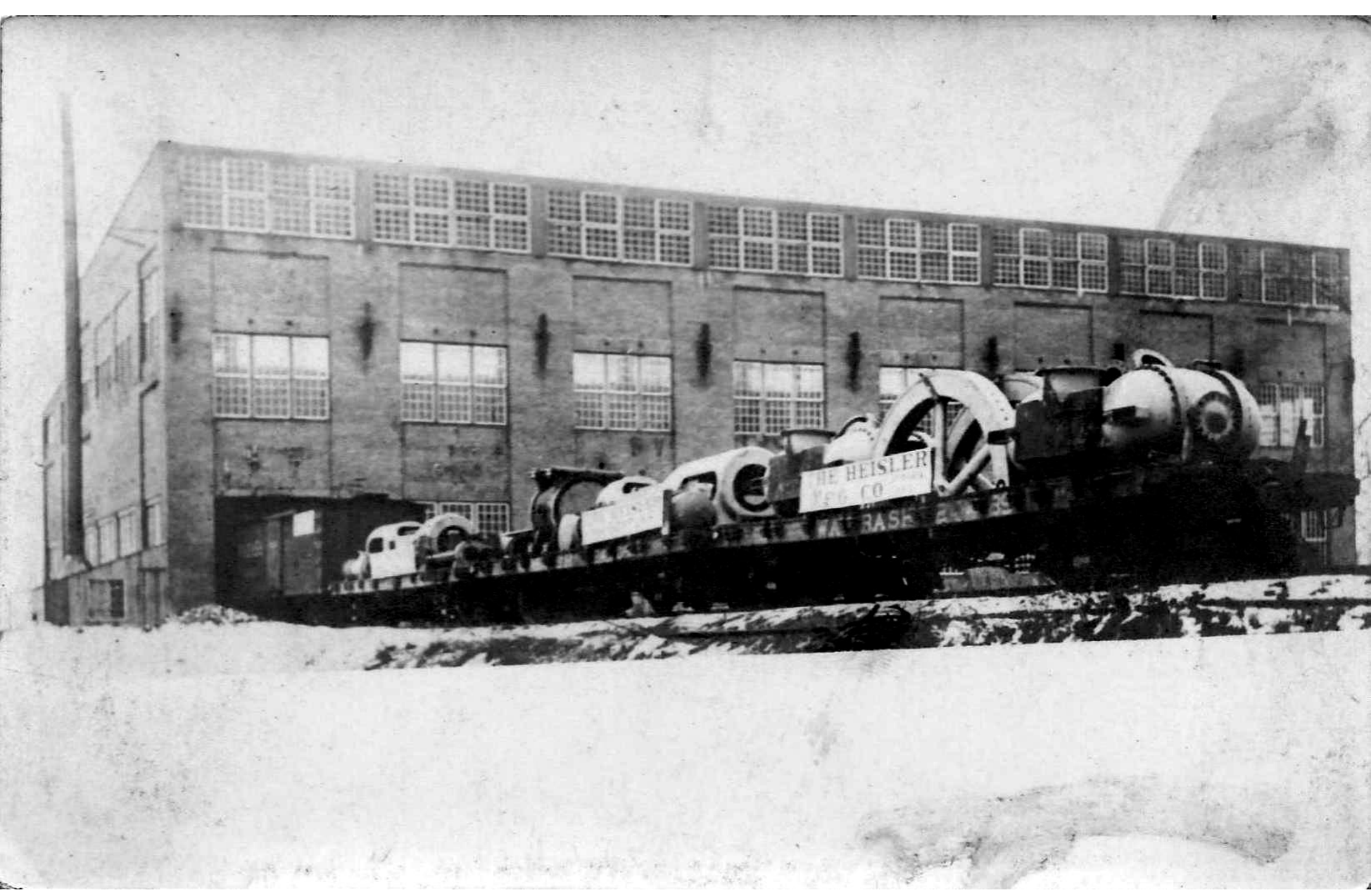
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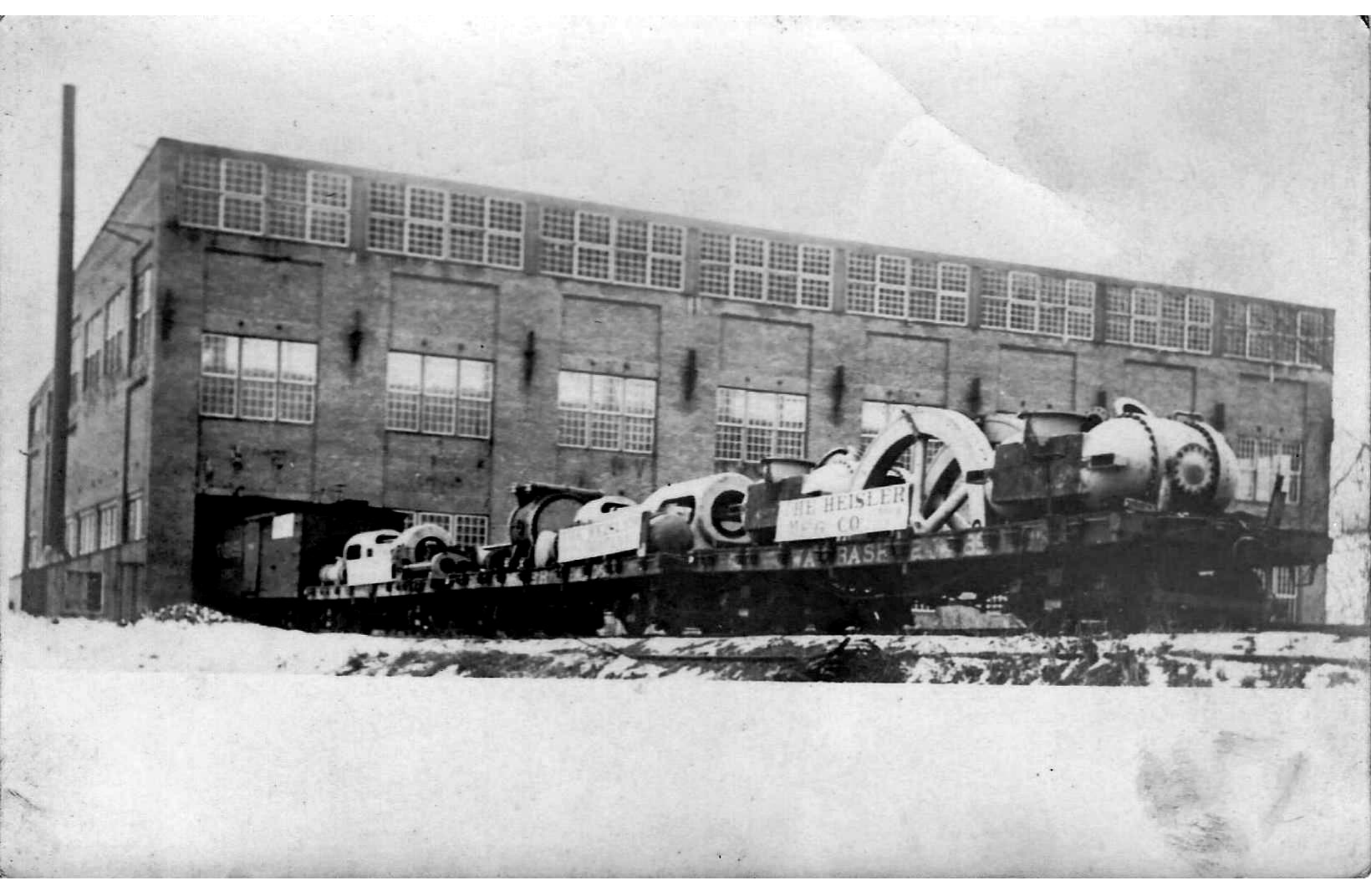
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EDITING PERFORMED BY: BRIAN D. SZAFRANSKI, ELMA, NY USA

COURTESY OF: WESTERN NEW YORK GAS & STEAM ENGINE ASSOCIATION

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